

Prospects for electric vehicles and autonomous driving

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Abstract

Currently, the transport sector creates some of the major problems for society: increasing GHG emissions and local pollutions, as well as accidents. There are expectations that electric vehicles can solve some of the environmental problems. However, accidents due to individual human behavior still pose a significant threat. The core objective of this paper is to analyze possible joint solutions linking E-mobility with autonomous driving. The success of these alternative and innovative solutions are very dependent on their costs, environmental aspects, as well as their reliability and safety. Although, a combination of electric vehicles and autonomous driving could solve some of the problems in the transport sector, there is a still lack of knowledge, experience and broad acceptance posing some of the major barriers.

Keywords – passenger cars, emissions, costs, battery, vehicle to grid

References related to the talk:



- [1] Ajanovic A., Haas R. (2018). Electric vehicles: solution or new problem?. *Environ Dev Sustain* (2018). <https://doi.org/10.1007/s10668-018-0190-3>
- [2] Ajanovic A.: The future of electric vehicles: prospects and impediments. *WIREs Energy Environment* 2015. doi: 10.1002/wene.160, 2015
- [3] Ajanovic A., Haas R. (2018). On the long-term prospects of power-to-gas technologies. *WIREs Energy Environ.* 2018;e318. <https://doi.org/10.1002/wene.318>
- [4] Ajanovic A., Haas R.: Driving with the sun: Why environmentally benign Electric Vehicles must plug in at Renewables. *Solar Energy* 121 (2015) 169-180.
- [5] Ajanovic A., G. Jungmeier, M. Beermann, R.Haas, Driving on renewables – on the prospects of alternative fuels up to 2050 from an energetic point-of-view in EU countries, *Journal of Energy Resources Technology* Published by ASME, *Journal of Energy Resources Technology* 135(3), 031201 (Jun 03, 2013) (7 pages) doi:10.1115/1.4023919.

Amela Ajanovic received her Ph.D. title in 2006 and defended her habilitation in 2016 at Technische Universität Wien. She is a senior researcher and lecturer at the Institute of Energy Systems and Electrical Drives at Technische Universität Wien. She is author of more than 50 papers in peer reviewed conference proceedings and international journals with more than 1000 citations. She supervised 15 successfully defended master theses. She is a principal investigator of several national and international projects. Her current teaching and research focus is on alternative fuels and alternative automotive technologies, energy efficiency,

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